



भारत सरकार
शहरी विकास मंत्रालय
निर्माण भवन

GOVERNMENT OF INDIA
MINISTRY OF URBAN DEVELOPMENT
NIRMAN BHAWAN

नई दिल्ली-110011, तारीख 200
New Delhi-110011, Dated the 200

S.K. Lohia
OSD(UT) & E.O. Joint Secretary
Tel No. 011 23061114

D.O. No. K-14011/21/2012-UT-IV(Pt.)
Dated the 9th October, 2013

Dear Sir/Madam,

Urban roads are currently being designed as per codes of Practice issued by the Indian Roads congress. There are at least 15 such codes. These are listed in **Annexure A**. These codes have been issued beginning in 1962 with the latest codes being issued about 10 years back. Most of these codes were issued in 1970s and 1980s.

2. The character and mix of modes using the roads has vastly changed and so has the use of urban roads. In addition the volume of traffic has multiplied several folds. A need was therefore felt to review the existing codes to suit the changing urban context. Accordingly a new Code of Practice for design of Urban Roads has been got prepared for the Ministry of Urban Development (MoUD), Government of India (GOI) through the Institute of Urban Transport (IUT) in association with the Transportation Research and Injury Prevention Programme (TRIPP), Indian Institute of Technology Delhi. The codes have been developed in consultation with various experts on this subject. The codes are in 5 parts;

- Part I : elaborates various norms and standards for urban road cross section design
- Part II: elaborates various norms and standards for intersection design
- Part III: elaborates various norms and standards for road markings
- Part IV: elaborates various norms and standards for signages.
- Part V : includes various norms and standards for traffic calming methods.

3. There are two basic variations from IRC codes, which are introduced in this code, based on latest research and practice around the world, namely-

- (i) IRC codes use different values for speed limit and design speed, while the new code requires the road to be designed for the intended speed limit on the road.
- (ii) Lane width has been linked to speed limit on the road in the new codes i.e. for lower speed limit lane width has been reduced. IRC uses the same lane width irrespective of the intended speed on the road.

4. I shall be grateful if you could advise your engineers working in cities to henceforth use these codes for design of urban roads. These codes should also be included in various tender conditions of urban road contracts. The codes can be downloaded from the website

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'www.moud.gov.in' of the Ministry or from the IUT (India) website from the link: <http://www.iutindia.org/downloads/Documents.aspx>. A detailed note on the features of the new code is attached as **Annexure B**.

With regards,

Encl: As above

To

The Chief Secretaries of all States/UTs

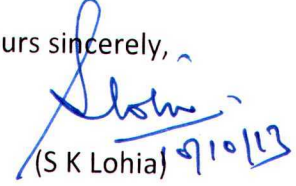
Copy to:

1. The Principal Secretaries of all States/UTs, Urban Development / PWD Departments.
2. The Principal Secretaries of all States/UTs, Transport Departments.
3. The Principal Secretaries of all States/UTs, Home Departments.
4. The Directors General of Police of all States/UTs.
5. Municipal commissioners all cities.
6. DG, Institute of Urban Transport(IUT), Delhi-92
7. Managing Director, Urban Mass Transit Company Ltd,(UMTC) New Delhi
8. NIC for uploading the advisory on MoUD's web-site.

Copy also to:

- (i) Secretary, Ministry of Road Transport, Govt. of India
- (ii) Vice Chairman, DDA, Vikash Sadan, INA, New Delhi
- (iii) DG, CPWD, Nirman Bhawan, New Delhi
- (iv) DG, Indian Road Congress, Shahjahan Road, New Delhi.

Yours sincerely,


(S K Lohia) 9/10/13

EXISTING IRC CODES

S.No	Name of IRC	Code/Document No.
1	Recommended Practice for the Design and Layout of Cycle Tracks	IRC:11-1962
2	Lateral and Vertical Clearances at Underpasses for Vehicular Traffic	IRC:54-1974
3	Recommended Practice for Traffic Rotaries	IRC:65-1976
4	Space Standards for Roads in Urban Areas	IRC:69-1977
5	Guidelines on Regulation and Control of Mixed Traffic in Urban Areas	IRC:70-1977
6	Geometric Design Standards for Urban Roads in Plains	IRC:86-1983
7	Guidelines for the Design of Interchanges in Urban Areas	IRC:92-1985
8	Guidelines on Accommodation of Underground Utility Services Along and Across Roads in Urban Areas (First Revision)	IRC:98-1997
9	Tentative Guidelines on the Provision of Speed Breakers for Control of Vehicular Speeds on Minor Roads	IRC:99-1988
10	Guidelines for Pedestrian Facilities	IRC:103-1988
11	Guidelines for Capacity of Urban Roads in Plain Areas	IRC:106-1990
12	Tentative Recommendations on the Provision of Parking Spaces for Urban Areas	IRC:SP:12-1973
13	Code of Practice for Road Markings (with Paints) (First Revision)	IRC:35-1997
14	Code of Practice for Road Signs (First Revision)	IRC:67-2001
15	New Traffic Signs	IRC:SP:31-1992

Detailed note - Code of Practice for design of Urban Roads

Urban roads in India have a heterogeneous mix of traffic. These include the pedestrians, slow moving vehicles like bicycles, rickshaws both for passenger and freight movement and fast motorized vehicles like motorcycles, scooters, three wheelers, cars and public transport vehicles. The space occupied by each of these vehicles, accelerations and deceleration characteristics and possible maximum speeds by each user is variable. Therefore space allocation to different vehicles has to be carefully ensured to achieve a smooth and safe flow of traffic.

2. The type and character of each urban road needs to be carefully detailed to respond to the functions it performs, i.e. providing mobility or access or both. Safety of road users is a major concern now because the number of traffic accidents and fatalities on urban roads has continued to increase in the past few years. Therefore application of appropriate geometric design standards on urban roads is essential to ensure the safety to all road users. A design of the entire road cross-section holds considerable importance, as it governs the design speed of vehicles and reflects prioritization in space allocation as well as introduces concepts of universal design and traffic calming.
3. This set of codes to design urban codes is an attempt to make a bridge between the current research on safe urban roads and safe road design in our cities today. For example the Indian Roads Congress Standard (IRC) code for urban roads, IRC 86-1983, 'The Geometric Guidelines for Urban Roads in Plains', focuses on the safe and economic operation of the vehicle. The design speed limits and design standards have to be brought into conformity with the requirements of sustainable safety principles accepted universally.
4. Also, our cities, and urban roads today have to be adapted to the concept of the universal design in all its totality. The roads today need to be "barrier free" and accessible by "all" including people with disabilities. This discussion on inclusive mobility is reflected in the proposed design standards with special attention to the details required in infrastructure and its various design components. In preparation of this new code, the provisions of various IRC codes have been taken into account.

5. This Code of Practice for Urban roads has developed over a period of two years (2010-2012) in following stages:
 - (i) Conceptual framework: This involved review of existing IRC codes applicable for urban roads , review of other best practice documents. The conceptual framework was presented to a review panel consisting of practitioners, city authorities, IRC representative, and academicians.
 - (ii) Draft report of Code of Practice for Urban Roads : Detailed draft report was prepared in close interaction with IUT. MORTH was associated through its technical wing, the Indian Roads Congress. Former IRC Secretary, Late Mr V.K. Sinha and Mr D.P. Gupta, Former DG were members of the committee to review the new code.
 - (iii) Final report of Code of Practice for Urban Roads: Final report incorporated comments received on the draft and further modified.
 - (iv) New features in Code of Practice for Urban Roads
 - (v) Design principles for road cross section, intersection, markings, signage and traffic calming at one place.
 - (vi) Design elements based on safe urban speed limit to meet the requirements of vulnerable road users.
 - (vii) Design guideline for modern roundabouts in urban areas.
 - (viii) Ready reckoner to provide guidance for right of way ranging from 6m - 120 m. based on road function and land use type.
6. This new code focuses on the requirements of pedestrians, non-motorized users and the public transport users in urban areas. These three groups form the basis of sustainable transport systems. The current National Urban Transport Policy adopted by the central government in 2006 also lays emphasis on designing the cities for people and not for vehicles. Therefore the road standards have been modified to reflect the priority of sustainable transport modes over ensuring mobility of personal motorized vehicles only.
7. Pedestrians, bicyclists and non-motorized cycle rickshaws are the most critical elements in mixed traffic. If the infrastructure design does not meet the requirements of these elements, all modes of transport operate in sub - optimal conditions. Despite unsafe conditions present on the road they continue to use these modes because their socio economic condition does not permit them to own and use motorized vehicles.

These users have opted for walking, cycles or public transport because it is needed for their very survival. They are willing to defy the formal street design, which is hostile to them. If our future cities have to meet the demands of sustainability, then we have to ensure that these environment friendly modes are used as a preferred choice over short motorized trips.

8. A reversal of current trend is possible. It is possible to design pedestrian, bicycle and public transport friendly urban roads. The guiding principle for such a design is meeting the needs of pedestrians, bicyclists and public transport commuters in that order. Use of alternative transportation systems, active transport, bus priority systems, open and green landscapes, pedestrian only areas are being seen as an opportunity to revive the city.
9. The roads today therefore need to address these issues by giving priority in thought and design of our urban roads. In view of the current modal shares and growth rates of cars, two wheelers and Para transit vehicles, it is recognized that two wheelers (motorcycles, and scooters) will continue to play a dominant role in the medium and small cities. The Para transit vehicles like three wheelers, tempos and rickshaws will continue to play an important role either as feeder system to the formal public transport systems or as semi-public transport systems in small and medium size cities. The new code caters to their needs as well.
10. Road markings are essential to guide the road users and to ensure a smooth flow of traffic. Road surface marking is used on a road surface in order to convey official information. Road Markings are defined as lines, patterns, words or other devices, applied to or attached to the carriageway or kerb or to the objects within as well as the adjacent to the carriageway, for controlling, warning, guiding and informing all the road users. Markings have to be of standard colour and dimensions and should be marked at appropriate places so as to optimize their visibility and effectiveness. The section on Road markings aims at discussing the standard markings, their purpose and the places where they should be located. The general guidelines for the road markings are first discussed and then later on the application of these standard markings is explained.
11. At speeds below 30km/hr pedestrians can co-exist with the motor vehicles in relative safety. Speed management and traffic calming include techniques such as discouraging traffic from entering certain areas and installing physical speed reducing measures, such as road narrowing, roundabouts and road humps. These measures are

always backed by speed limits of 30 km/hr, but they can be designed to achieve various levels of speed. Traffic calming is a combination of mainly physical measures that reduce the negative effects of motor vehicle use, alter driver behaviour and improve conditions for non-motorized street users. This is included in volume 5 of the code

References:

- ① ASVV, Recommendations for Traffic Provisions in Built Up areas, 1998 Centre for Research and Contract Standardization in Civil Engineering (CROW), The Netherlands
- ② Manual on Uniform Traffic Control Devices (MUTCD) U.S Department of Transportation
- ③ AASHTO , American Association of State Highway and Transport Officials
- ④ U.K Road Standards for geometric designs
- ⑤ Design Manual for bicycle Traffic , CROW Record 25 , 2007 , The Netherlands
- ⑥ Japan urban Road Standards